Incoming:9205521

-Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

SEP 17 1992

92-ERB-145

Mr. David B. Jansen, P.E.
Hanford Project Manager
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Jansen:

HEXONE REMEDIATION

As part of the Resource Conservation and Recovery Act closure of the Hexone Storage and Treatment Facility at the Hanford Site, the U.S. Department of Energy, Richland Field Office (RL), recently completed the shipment of 34,000 gallons of radioactively decontaminated waste hexone solvents to a licensed incinerator in Tennessee. In addition, work is progressing on the draft closure plan which is scheduled for submittal to the State of Washington Department of Ecology (Ecology) by November 30, 1992, in accordance with the Hanford Federal Facility Agreement and Consent Order Milestone M-20-27. The activities associated with the hexone remediation are consistent with the draft closure plan and are described in Enclosure 1. Enclosure 2 is a schematic of the equipment layout and tank configuration.

In Enclosure 3 you will find the current status of the equipment associated with the hexone storage and remediation, as well as a description of the planned disposition of that equipment. RL is requesting Ecology to concur with the decontamination of the tank-cars and distillation system (as described) prior to either the utilization or disposal of the equipment. A prompt reply is requested from Ecology to allow work to proceed in a timely manner.

If you have any questions or require additional information, please contact Mr. R. G. McLeod, RL, on (509) 372-0096, or Ms. S. M. Price, Westinghouse Hanford Company, on (509) 376-1653.

Sincerely,

James D Bauer

James D. Bauer, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Field Office

R E Lerch

R. E. Lerch, Deputy Director
Restoration and Remediation
Westinghouse Hanford Company

Enclosures:

1. Description of Hexone Remediation
2. Schematic of the equipment layout and tank configuration
3. Current Status and Planned Disposition of the Hexone Equipment

cc w/encls:
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Enclosure 1

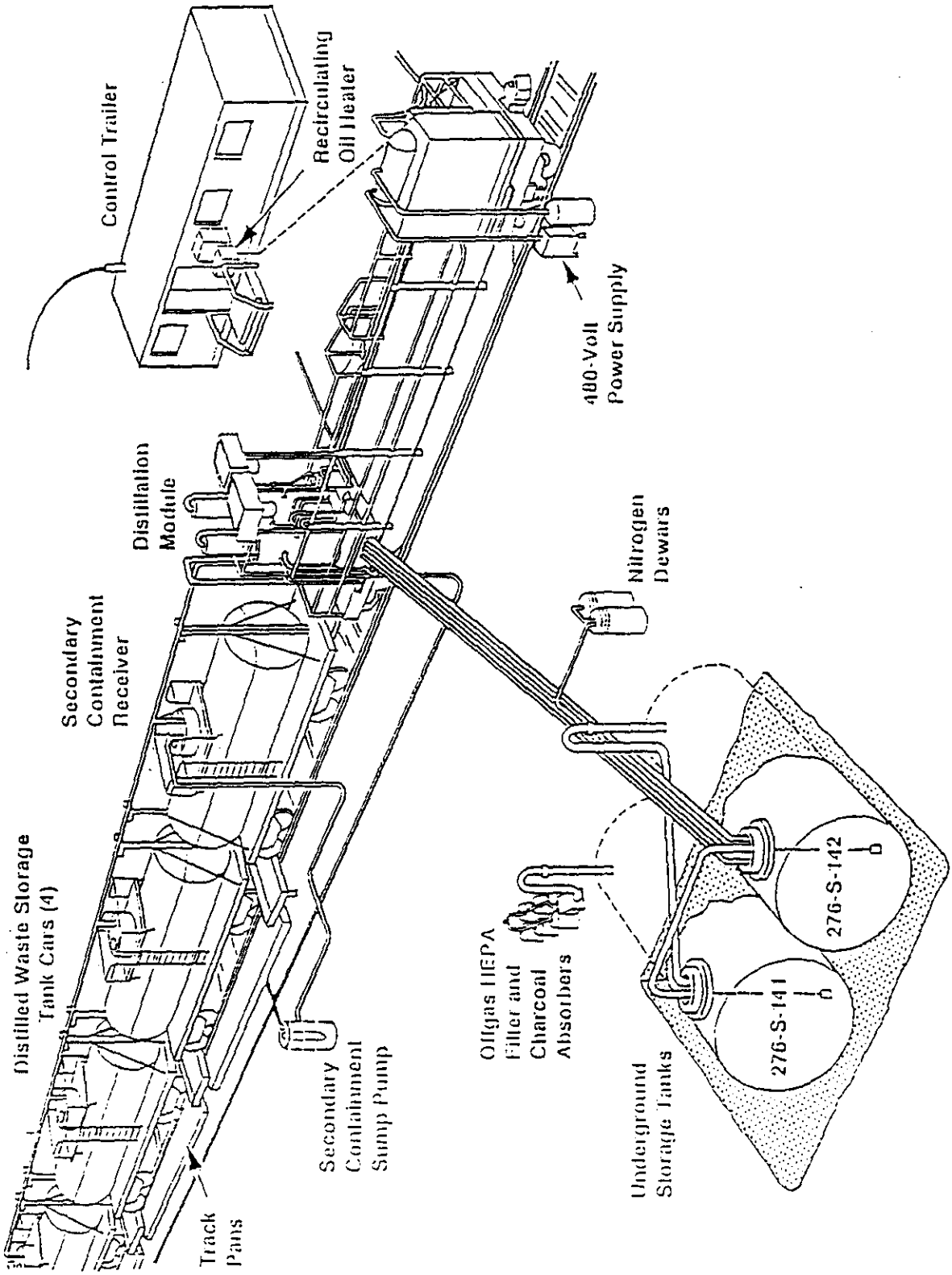
DESCRIPTION OF HEXONE REMEDIATION

The Hexone Remediation project was initiated to remove the radioactively contaminated hexone solvents from the 276-S-141 and 276-S-142 tanks (two aging carbon steel underground storage tanks) and to destroy the solvents by incineration. The lack of national capability to incinerate solvents contaminated with significant levels of alpha and beta/gamma contamination led to a two-phase strategy of separating the radionuclides by double distillation and destroying the resulting bulk distillate in a commercial low-level waste incinerator.

The double distillation was carried out in a rail-car mounted distillation system that was assembled and moved to the hexone site in the spring of 1990. The distillation work was carried out in a three-month period in the late summer of 1990. Final distillation operations were completed in November 1990. Approximately 34,000 gallons of distillate were accumulated in four rail tank cars for temporary storage. The decontamination effort fully met expectations, removing more than 99.9 percent of alpha and hard beta emitters, and producing a treated waste suitable for commercial incineration.

At the time the Dangerous Waste Part A Permit Application was prepared (Rev. 1, May 19, 1988), it had been expected that it would be necessary to bring a portable incinerator to the site; in the interim, however, commercial offsite mixed waste incineration capabilities became available. The incineration was contracted to Chem Nuclear/Diversified Scientific Services, Inc. (DSSI) and beginning in November 1991 the distillate was transported to their incinerator in Kingston, Tennessee. The last shipment which included tank car and piping rinsate was on June 10, 1992. The disposal operation is approaching completion with more than 33,000 gallons incinerated to date. DSSI is expected to issue a certificate of destruction by January 1993.

With the bulk of the hexone waste now shipped offsite, efforts are focusing on stabilizing the underground storage tanks, dismantling or disposition the distillation system for reuse, safely storing residual radioactive mixed wastes, and disposing of surplus equipment.



Hexone Storage and Treatment Facility

CURRENT STATUS AND PLANNED DISPOSITION OF THE HEXONE EQUIPMENT

Underground Storage Tanks (USTs) 276-S-141 and 276-S-142

The two 23,500 gallon USTs have been pumped to the lowest level practical utilizing existing equipment. Each of the two tanks is estimated to contain five to thirty gallons of liquid, mainly water, and up to 250 gallons of a solid tar-like substance and rust. The tanks are inert gas blanketed, and a small stream of nitrogen gas is flowing through the tanks in an effort to dry the tank contents. Off-gas fumes are vented through a High Efficiency Particulate Air filter and a charcoal absorber system. Cleaning and physical removal of the underground tanks are described in the draft closure plan and will commence upon approval of the closure plan.

Distillation System

The distillation system has been decontaminated and placed in a standby storage condition. All components wetted by raw feed (untreated underground tank contents) have been removed and will be stored as mixed waste. All distillation system components that have been wetted by distillate have been or will be decontaminated or removed for storage as mixed waste. Decontamination consisted of applying a minimum of three rinse volumes of 0.0018 gallons of a detergent solution and water per square inch of interior surface. All rinsate has been shipped to the DSSI incinerator as "mixed waste."

The decontaminated distillation system has been moved a few hundred feet north of its original location to allow other remedial work unrelated to the hexone project to proceed in this area. Dismantling or disposition for reuse is expected to begin in September of 1992; all components will be stored until your office has authorized their ultimate disposition.

Mixed Waste Piping and Equipment

All radioactive mixed waste piping and equipment such as pumps and valves have been moved to safe storage at Hanford's Central Waste Complex. The temporary piping connecting the distillation systems to the underground tanks, the radioactive distillation system piping, and the 276-S-141 tank piping access flange have been cut up, packaged in lined 55-gallon galvanized drums, and shipped to the Mixed Waste Section of the Central Waste Complex. The three 250-gallon distillation vessels that accumulated the bulk of the radionuclides in a solid tar-like substance were removed from the distillation system and are temporarily stored next to the hexone tank enclosure. The liquid that was in the upper part of the vessels has been transferred to the Mixed Waste Section of the Hanford Central Waste Complex in overpacked 15-gallon 17E drums. The solid radioactive material remaining in the vessels has been sampled and is being analyzed to allow shipment of the vessels to the Central Waste Complex. The demister housings and elements are also slated for storage at the Central Waste Complex.

Distillate Tank Cars and Piping

Piping and tank cars carrying only distillates were rinsed (once) with a detergent solution (three percent PACE-T-10X, a commercial food-plant cleaner in water) to emulsify and remove any remaining distillates, and were then flushed with water. The piping was triple rinsed using a 0.0018 gallons of rinsate/square inch of surface area formula. The tank cars were rinsed with a global spray nozzle. Each tank car received one detergent rinse (50 gal minimum) followed by a water rinse (30 gal minimum). The tank car vessels were then pumped out and drained via the bottom outlet. Rinsate and flush water were loaded into the tank trailer for shipment to the DSSI incinerator. The tank cars were allowed to air dry. Visual inspection showed the tank car vessels to be clean and dry. The absence of volatile fumes was verified with an HNU organic vapor detector. The tank cars were then moved approximately one-half mile north of the hexone site. The tank cars will remain in the 200 West Area to allow your office time for review of the decontamination procedures described in this letter. The flushed overhead distillate transfer piping has been cut into sections and packaged in low-level radioactive waste drums and will be held in the 200 West Area for regulatory concurrence of decontamination.

Secondary Containment System

The secondary containment system consisting of 20 track pans located under the tank cars, an overhead pan, drain piping, a sump drum and pump, and an 11,300 gallon tank car never came in contact with the waste (as verified by sampling/analysis). This equipment has been removed, surveyed, and is being stored in 200 West Area also awaiting regulatory release.

Spare Equipment Car

The spare equipment car was never involved in the process operation and will continue to be used to store spare, clean equipment as long as needed.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. D. Bauer, RL R. E. Lerch, WHC (D. P. Butcher, WHC)	D. B. Jansen, Ecology	Incoming:9205521

Subject: HEXONE REMEDIATION

INTERNAL DISTRIBUTION

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		G. D. Carpenter	B2-16	
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		G. D. Forehand	B2-35	
		C. J. Geier	B2-19	
		R. J. Landon	B2-19	
		R. E. Lerch, Assignee	B2-19	
		P. J. Mackey	B3-15	
		H. E. McGuire, Level 1	B3-63	
		R. D. Morrison	B2-35	
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		M. A. Wasemiller	H4-55	
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